

CLAIMS

1. An integrated circuit comprising:
a first sub-circuit coupled to a first power supply rail providing a first power supply voltage;
a second sub-circuit coupled to a second power supply rail providing a second power supply voltage; and
a first power supply modulator, coupled to the first sub-circuit, the modulator modulating the first power supply voltage without modulating the second power supply voltage.

2. The integrated circuit of claim 1, wherein the first power supply modulator comprises means for increasing the first power supply voltage.

3. The integrated circuit of claim 1, wherein the first power supply modulator comprises means for decreasing the first power supply voltage.

4. The integrated circuit of claim 1, further comprising:

a second power supply modulator, coupled to the second sub-circuit, the second modulator modulating the second power supply voltage without modulating the first power supply voltage.

5. The integrated circuit of claim 1, further comprising:

an output identifier, coupled to the first sub-circuit, that identifies an actual output of the first-sub-circuit while the first power supply modulator modulates the first power supply voltage; and

a comparator, coupled to the output identifier, that compares the actual output to an expected output of the first sub-circuit.

6. The integrated circuit of claim 1, wherein the first power supply modulator comprises at least one first shunt coupled to the first power supply rail.

7. The integrated circuit of claim 6, wherein the at least one first shunt comprises at least one transistor.

8. The integrated circuit of claim 6, further comprising:

a first shunt controller, coupled to the at least one first shunt, that controls activation of the at least one first shunt.

9. The integrated circuit of claim 8, wherein the first shunt controller comprises means for activating the at least one first shunt for a first predetermined period of time.

10. The integrated circuit of claim 8, wherein the at least one first shunt comprises a first plurality of shunts, and wherein the first shunt controller comprises means for activating a predetermined subset of the first plurality of shunts.

11. The integrated circuit of claim 8, further comprising:

a trigger circuit that provides a trigger signal to the first shunt control means; and

wherein the first shunt controller comprises means for activating the at least one first shunt in response to receipt of the trigger signal.

12. The integrated circuit of claim 11:

wherein the second power supply modulator comprises at least one second shunt coupled to the second power supply rail;

wherein the integrated circuit further comprises a second shunt controller, coupled to the at least one second shunt, that controls activation of the at least one second shunt;

wherein the trigger circuit comprises means for providing the trigger signal to the second shunt control means;

wherein the second shunt controller comprises means for activating the at least one second shunt in response to receipt of the trigger signal.

13. The integrated circuit of claim 11, further comprising:

delay means, coupled between the trigger circuit and the first shunt controller, for delaying the trigger signal by a predetermined delay and for providing the delayed trigger signal to the first shunt controller; and

wherein the first shunt controller comprises means for activating the at least one first shunt in response to receipt of the delayed trigger signal.

14. An integrated circuit comprising:

a first sub-circuit coupled to a first power supply rail providing a first power supply voltage;

a second sub-circuit coupled to a second power supply rail providing a second power supply voltage;

a first plurality of shunts coupled to the first power supply rail and to the first sub-circuit to modulate the first power supply voltage without modulating the second power supply voltage;

first shunt control means, coupled to the first plurality of shunts, for activating a predetermined subset of the first plurality of shunts for a first predetermined period of time in response to receipt of a trigger signal;

output identification means, coupled to the first sub-circuit, for identifying an actual output of the first-sub-circuit while the first power supply modulation means modulates the first power supply voltage; and

comparison means, coupled to the output identification means, for comparing the actual output to an expected output of the first sub-circuit.

15. A method for use of an integrated circuit including a first sub-circuit coupled to a first power supply rail providing a first power supply voltage and a second sub-circuit coupled to a second power supply rail providing a second power supply voltage, the method comprising steps of:

(A) receiving a trigger signal; and

(B) in response to receipt of the trigger signal, modulating the first power supply voltage without modulating the second power supply voltage.

16. The method of claim 15, wherein the step (B) comprises a step of increasing the first power supply voltage.

17. The method of claim 15, wherein the step (B) comprises a step of decreasing the first power supply voltage.

18. The method of claim 15, further comprising a step of:

(C) in response to receipt of the trigger signal, modulating the second power supply voltage without modulating the first power supply voltage.

19. The method of claim 15, wherein the step (B) comprises a step of modulating the first power supply voltage by a first amount, and wherein the step (C) comprises a step of modulating the second power supply voltage by a second amount which differs from the first amount.

20. The method of claim 18, wherein the step (B) comprises a step of modulating the first power supply voltage for a first period of time, and wherein the step (C) comprises a step of modulating the second power supply voltage for a second period of time which differs from the first period of time.

21. The method of claim 18, wherein steps (B) and (C) are performed contemporaneously.

22. The method of claim 15, further comprising steps of:

- (C) identifying an actual output of the first-sub-circuit while the step (B) is being performed; and
- (D) comparing the actual output to an expected output of the first sub-circuit.

23. The method of claim 15, wherein the step (B) comprises a step of activating at least one first shunt for a first predetermined period of time, the at least one first shunt being coupled to the first power supply rail.

24. The method of claim 15, wherein the at least one first shunt comprises a first plurality of shunts, and wherein the step (B) comprises a step of activating a predetermined subset of the first plurality of shunts.

25. The method of claim 15, further comprising a step of:

- (C) prior to the step (B), delaying the trigger signal by a predetermined delay to produce a delayed trigger signal;

wherein the step (A) comprises a step of receiving the delayed trigger signal; and

wherein the step (B) comprises a step of modulating the first power supply voltage without modulating the second power supply voltage in response to receipt of the delayed trigger signal.

26. A method for use of an integrated circuit including a first sub-circuit coupled to a first power supply rail providing a first power supply voltage and a second sub-circuit coupled to a second power supply rail providing a second power supply voltage, the method comprising steps of:

- (A) receiving a trigger signal;
- (B) in response to receipt of the trigger signal, activating a subset of a first plurality of shunts for a first predetermined period of time to modulate the first power supply voltage by a first amount; and
- (C) in response to receipt of the trigger signal, activating a subset of a second plurality of shunts for a second predetermined period of time to modulate the second power supply voltage by a second amount which differs from the first amount;

wherein the steps (B) and (C) are performed contemporaneously.